Date of Posting: October 31, 2025

Steven Boor
Lightning Renewables, LLC.
Missoula RNG Facility
3737 Coal Mine Road
Missoula, Montana 59802

RE: Final and Effective Montana Air Quality Permit #5286-03

Sent via email: sboor@archaea.energy

Dear Mr. Boor:

Montana Air Quality Permit (MAQP) #5286-03 for the above-named permittee is deemed final and effective as of October 31, 2025, by the Montana Department of Environmental Quality (DEQ). All conditions of the Decision remain the same. A copy of final MAQP #5286-03 is enclosed.

For DEQ,

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Montana Department of Environmental Quality
Air, Energy & Mining Division
Air Quality Bureau

Montana Air Quality Permit #5286-03

Lightning Renewables, LLC.
Missoula RNG Facility
3737 Coal Mine Rd
Missoula, Montana 59802

Final and Effective Date:
October 31, 2025

MONTANA AIR QUALITY PERMIT

Issued To: Lightning Renewables, LLC dba Lightning Renewables - Missoula RNG Facility 3737 Coal Mine Rd Missoula, MT 59802	MAQP: #5286-03 Administrative Amendment (AA) Request Received: 09/26/2025 DEQ's Decision on AA: 10/15/2025 Permit Final: 10/31/2025

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Lightning Renewables, LLC, dba Lightning Renewables – Missoula RNG facility (Lightning Renewables), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended, for the following:

Section I: Permitted Facilities

A. Plant Location

The Lightning Renewables landfill gas (LFG) collection system is located approximately 0.6 miles from the nearest commercial facility and 0.44 miles from the nearest private farmstead which is located directly east of the proposed pad for the new equipment. The proposed pad is located within Section 5, Township 13 North and Range 19 West. The area surrounding the property is generally identified as "landfill" with legal parcels both under the ownership of Allied Waste and BFI Waste Systems.

Gas collection will occur in those areas of the landfill producing enough methane from decomposing waste. The physical address of Lightning Renewables is 3737 Coal Mine Road, Missoula MT. The physical pad site is located within a legal parcel owned and operated as a landfill by Allied Waste Systems of Montana, LLC. Lightning Renewables will operate independent of the landfill.

B. Current Permit Action

On September 26, 2025, the Montana Department of Environmental Quality (DEQ) received a request from Archaea Energy, the parent company of Lightning Renewables, for Administrative Amendment (AA) of MAQP #5286-02 to correct administrative errors.

Section II: Conditions and Limitations

A. Emission Limitations

1. Lightning Renewables shall install and continuously operate process instrumentation to demonstrate that a minimum temperature of 1500º F (on a 15-minute rolling average) is being maintained whenever waste gas is being combusted in the TO (ARM 17.8.749 and ARM 17.8.752).

2. Lightning Renewables shall not send waste gases to the TO until the TO temperatures have achieved 1500º degrees Fahrenheit (ºF) and have stabilized according to permit condition Section II.A.1 (ARM 17.8.749).

3. Lightning Renewables shall use pipeline quality natural gas as supplemental fuel for the TO and maintain good combustion practices to minimize emissions (ARM 17.8.749 and ARM 17.8.752).

4. Lightning Renewables shall install a TO with design specifications for no less than 99.0 percent VOC destruction efficiency or 20 parts per million volume (ppmv) as hexane (ARM 17.8.749 and ARM 17.8.752).

5. Emissions from the TO shall not exceed the following based on a 1-hour average (ARM 17.8.749, ARM 17.8.752, and ARM 17.8.770):

   Oxides of Nitrogen (NO_X) – 4.56 pounds per hour (lb/hr)
   Carbon Monoxide (CO) – 15.21 lb/hr
   Volatile Organic Compounds (VOC) – 5.64 lb/hr
   Sulphur Dioxide (SO_2) – 1.72 lb/hr
   Hazardous Air Pollutants (HAPs) – 0.38 lb/hr
   Filterable and Condensable PM with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$) – 0.87 lb/hr

6. Lightning Renewables shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines and 40 CFR 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, for any applicable diesel engine (ARM 17.8.340; 40 CFR 60, Subpart IIII; ARM 17.8.342 and 40 CFR 63, Subpart ZZZZ).

7. Lightning Renewables shall not cause or authorize emissions to be discharged into the outdoor atmosphere from the TO that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749, ARM 17.8.752).

8. Except as specified in Section II.A.7, Lightning Renewables shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).

9. Lightning Renewables shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).

B. Testing Requirements

1. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

2. To demonstrate compliance with Section II.A.4 and the lb/hr HAPs emission limit in Section II.A.5, within 180 days of initial startup of the TO Lightning Renewables shall demonstrate a minimum VOC destruction efficiency of 99.0 percent OR an outlet concentration of 20 ppmv of hexane.

   The VOC control efficiency shall be determined by the following equation (ARM 17.8.105 and ARM 17.8.749):

   Control Efficiency = (VOC_{in} lb/hr – VOC_{out} lb/hr)/(VOC_{in} lb/hr) x 100%

   Lightning Renewables shall utilize EPA Methods 1-4 and 25A/or equivalent methods to determine VOC destruction efficiency.

3. To demonstrate compliance with the emission limits in Section II.A.5, within 180 days of initial start-up of the TO, Lightning Renewables shall conduct initial source testing for NOx, CO, and SO_2.

   Lightning Renewables shall utilize EPA Methods 1-4, 6C, 7E, and 10 and/or equivalent methods to determine/validate NO_X, SO_2 and CO emission rates. Testing for NO_X, SO_2 and CO shall occur concurrently.

4. To demonstrate compliance with the opacity limit in Section II.A.7. and the $PM_{2.5}$ emission limit in Section II.A.5, Lightning Renewables shall conduct weekly observations for visible emissions (opacity) from the TO, when it is in operation. If visible emissions are observed, Lightning Renewables shall conduct an EPA Method 9 Visible Opacity determination to demonstrate compliance with the opacity limits in Section II.A.7 (ARM 17.8.749).

5. DEQ may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. Lightning Renewables shall supply DEQ with annual production information for all emission points, as required by DEQ in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

   Production information shall be gathered on a calendar-year basis and submitted to DEQ by the date required in the emission inventory request. Information shall be in the units required by DEQ. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. Lightning Renewables shall submit the following information annually to DEQ by March 1 of each year; the information may be submitted along with the annual emission inventory (ARM 17.8.505).

   a. Hours of operation of the TO
   b. Temperature of TO during operation

c. Weekly opacity observations
d. EPA Method 9 Test results

3. Lightning Renewables shall notify DEQ of any construction or improvement project conducted, pursuant to ARM 17.8.745, that would include the addition of a new emissions unit, change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation.

   The notice must be submitted to the DEQ, in writing, 10 days prior to startup or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change and must include the information requested in ARM 17.8.745(l)(d) (ARM 17.8.745).

4. All records compiled in accordance with this permit must be maintained by Lightning Renewables as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by DEQ, and must be submitted to DEQ upon request. These records may be stored at a location other than the plant site upon approval by DEQ (ARM 17.8.749).

D. Notifications

Lightning Renewables shall provide DEQ with written notification of the following information within the specified time periods (ARM 17.8.749):

a. Initial start-up date of the TO within 15 working days of start-up.

SECTION III: General Conditions

A. Inspection – Lightning Renewables shall allow DEQ's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment such as Continuous Emission Monitoring Systems (CEMS) or Continuous Emission Rate Monitoring Systems (CERMS), or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if Lightning Renewables fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Lightning Renewables of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).

D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties, or other enforcement action as specified in Section 75-2-401, *et seq.*, MCA.

E. Appeals – Any person or persons jointly or severally adversely affected by DEQ's decision may request, within 15 days after DEQ renders its decision, upon affidavit setting forth the grounds therefor, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act.

The filing of a request for a hearing does not stay DEQ's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of DEQ's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, DEQ's decision on the application is final 16 days after DEQ's decision is made.

F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by DEQ at the location of the source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by Lightning Renewables may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Duration of Permit – Construction or installation must begin, or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

Montana Air Quality Permit Analysis
Lightning Renewables, LLC
MAQP #5286-03

I. Introduction/Process Description

Lightning Renewables, LLC dba Lightning Renewables – Missoula RNG Facility (Lightning Renewables) installed and operates a landfill gas (LFG) processing system. The legal address of the facility is Section 5, Township 13 North, and Range 19 West. The physical address is 3737 Coal Mine Road, Missoula MT. The LFG processing facility is located at an existing municipal solid waste landfill owned and operated by Allied Waste Systems of Montana, LLC (Allied Waste). Lightning Renewables operates independently of the landfill.

A. Permitted Equipment

Lightning Renewables operates a LFG processing system for the purpose of collecting, refining, and injecting renewable natural gas from an existing landfill into an existing natural gas pipeline. Equipment includes:

- Thermal oxidizer (TO)
- 324 horsepower (hp) diesel fired emergency backup generator
- Associated equipment including a closed system processing treatment train (treatment train), which conditions the waste gas received from the landfill allowing for the methane to be recovered and sold and for the waste gases to be combusted in the TO.

B. Source Description

Lightning Renewables Missoula Renewable Natural Gas (RNG) plant utilizes LFG generated from the Allied Waste as feedstock. The LFG received by Lightning Renewables undergoes processing, consisting of dewatering/moisture removal, sulfur compound removal, filtration, temperature swing adsorption, membrane separation, and pressure swing adsorption. The refined RNG consists of greater than 95% methane, that is compressed and injected into a nearby natural gas transmission pipeline for sale. The project uses a thermal oxidizer (TO) as pollution control equipment, and a diesel-fired emergency backup generator for use when the typical sources of power are unavailable.

Currently, all LFG produced is collected at Allied Waste and vented to an existing flare where it is combusted without the ability to recover any of the methane for beneficial use. The Allied Waste flare will continue to remain as a secondary backup for the new Lightning Renewables facility should Lightning Renewables suffer process upsets where waste gases cannot be combusted by the Lightning Renewables TO. Allied Waste currently holds an existing Title V Operating Permit (#OP2831-07), which authorizes the operation of the gas collection system and existing flare. The Title V Operating Permit for Allied Waste will remain in effect regardless of the status of this Montana Air Quality Permit (MAQP) issued to Lightning Renewables.

C. Permit History

MAQP #5286-00 was issued to Lightning Renewables, LLC, on May 8, 2023.

On December 26, 2023, DEQ received a notification from Archaea Energy, the parent company of Lightning Renewables, LLC., of a change of address. **MAQP #5286-01** replaced MAQP #5286-00.

On May 30, 2025, DEQ received an application from Archaea Energy, the parent company of Lightning Renewables, LLC., to modify MAQP #5286-01. In the application, Lightning Renewables is requesting to revise the facility's design to decrease the maximum LFG throughput capacity from 3,200 dry standard cubic feet per minute (dscfm) to 1,400 dscfm. This design change also involves replacing the thermal recuperative oxidizer (TRO) with a direct fired TO and removes the TOs back-up flare from the design.

The proposed TO has been designed to perform the function of both a flare for waste gas with high heat content and a thermal oxidizer for waste gas with low heat content. In this smaller processing plant design, a direct fired TO, which does not require pre-heating, is more efficient and can fulfill both roles. As a result, the previously proposed worst-case scenario with the backup flare has been eliminated. While there is a slight increase in fuel consumption due to the absence of pre-heating of dilution air by the TO, overall emissions are lower, except for VOC and SO_2. These pollutants are higher due to the more conservative TO design specifications for methane and sulfur content. **MAQP #5286-02** replaces MAQP #5286-01.

D. Current Permit Action

On September 26, 2025, DEQ received a request from Archaea Energy, the parent company of Lightning Renewables, for Administrative Amendment (AA) of MAQP #5286-02 to correct administrative errors. **MAQP #5286-03** replaces MAQP # 5286-02.

E. Additional Information

Additional information, such as applicable rules and regulations, BACT determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from DEQ. Upon request, DEQ will provide references for the location of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of DEQ, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by DEQ.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by DEQ, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

   Lightning Renewables shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports.
   A copy of the Montana Source Test Protocol and Procedures Manual is available from DEQ upon request.

4. ARM 17.8.110 Malfunctions. (2) DEQ must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}
11. ARM 17.8.230 Fluoride in Forage

Lightning Renewables must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source

installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, Lightning Renewables shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.

7. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.

8. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). Lightning Renewables is considered an NSPS affected facility under 40 CFR Part 60 and is subject to the requirements of the following subparts.

   a. 40 CFR 60, Subpart A – General Provisions apply to all equipment or facilities subject to an NSPS Subpart as listed below:

   b. 40 CFR 60, Subpart IIII – Standard of Performance for Stationary Spark Ignition Internal Combustion Engines. The proposed engine is affected sources under this subpart because it is smaller than 30 liters per cylinder and is manufactured after 2007.

9. ARM 17.8.341 Emission Standards for Hazardous Air Pollutants. This source shall comply with the standards and provisions of 40 CFR Part 61, as appropriate.

   a. 40 CFR 61, Subpart A – General Provisions apply to all equipment or facilities subject to a NESHAP Subpart as listed below:

   b. 40 CFR 63, Subpart ZZZZ National Emission Standards for Hazardous Air Pollutants From Reciprocating Internal Combustion Engines. The proposed facility contains four stroke lean burn LFG engines at an area source of HAPs which are affected sources under 40 CFR 63 Subpart ZZZZ.

However, because the LFG extraction and purification facility would be an area source of HAPs and not a major source of HAPs, the engines may meet the requirements of 40 CFR 63, Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart IIII for compression ignition engines. No further requirements apply for such engines under 40 CFR 63, Subpart ZZZZ.

D. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to DEQ. An application fee was not required because the current permit action is considered an administrative change.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to DEQ by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by DEQ. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

   An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. DEQ may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.

E. ARM 17.8, Subchapter 7 – Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify, or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year of any pollutant. Lightning Renewables has a PTE greater than 25 tons per year of Carbon Monoxide (CO); therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, modification, or use of a source. A permit application was not required for the current permit action because the permit change is considered an administrative change. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. An affidavit of publication of public notice was not required for the current permit action because the permit change is considered an administrative change.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by DEQ must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. A BACT analysis was not required for the current permit action because the permit change is considered an administrative change.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by DEQ at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Lightning Renewables of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*

10. ARM 17.8.759 Review of Permit Applications. This rule describes DEQ's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.760 Additional Review of Permit Applications. This rule describes DEQ's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.

12. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or modified source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

13. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

14. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

15. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of intent to transfer, including the names of the transferor and the transferee, is sent to DEQ.

16. ARM 17.8.770 Additional Requirements for Incinerators. This rule specifies the additional information that must be submitted to DEQ for incineration facilities subject to 75-2-215, Montana Code Annotated (MCA).

17. ARM 17.8.771 Mercury Emission Standards for Mercury-Emitting Generating Units. This rule identifies mercury emission limitation requirements, mercury control strategy requirements, and application requirements for mercury-emitting generating units.

F. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source because this facility is not a listed source and the facility's PTE is below 250 tons per year of any pollutant (excluding fugitive emissions).

G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:

a. PTE > 100 tons/year of any pollutant;

b. PTE > 10 tons/year of any one hazardous air pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as DEQ may establish by rule; or

c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #5286-01 for Lightning Renewables, the following conclusions were made:

   a. The facility's PTE is less than 100 tons/year for any pollutant.

   b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year for all HAPs.

   c. This source is not located in a serious PM_{10} nonattainment area.

   d. This facility is subject to any current NSPS (40 CFR 60, Subparts A and IIII).

   e. This facility is not subject to any current NESHAP standards (40 CFR 63, Subpart A and ZZZZ).

   f. This source is not a Title IV affected source, or a solid waste combustion unit.

   g. This source is not an EPA designated Title V source.

   Based on these facts, DEQ determined that Lightning Renewables is a minor source of emissions as defined under Title V.

III. BACT Determination

A BACT determination is required for each pollutant emitted by each new or modified source. Lightning Renewables shall install on the new or modified source the maximum air pollution control capability, which is technically practicable and economically feasible, except that BACT shall be utilized. The current permit action is administrative and does not propose any new or modified sources of air pollution; therefore, a BACT determination was not required.

IV. Emission Inventory

CONTROLLED EMISSIONS	**tons/year**							
Emission Source	**PM_{Tot}**	**PM_{10}**	**$PM_{2.5}$**	**NO_X**	**CO**	**VOC**	**SO_2**	**HAPs**
Thermal Oxidizer	3.80	3.80	3.80	19.99	66.63	24.68	7.54	1.65
Natural Gas Emissions – TO	0.39	0.39	0.39	--	--	0.28	0.003	0.097
Emergency Generator	0.015	0.015	0.015	0.532	0.134	0.532	0.001	0.532
Total Emissions	**4.21**	**4.21**	**4.21**	**20.52**	**66.76**	**25.49**	**7.54**	**2.28**

Notes:

1. Values in table reflect "controlled" emissions
2. NOx and CO. TO natural gas emissions are included in WG emissions factor, vender outlet guarantee.
3. PM emissions for the TO are assumed to be $PM_{2.5}$ Fil. and Cond.

Thermal Oxidizer		
Hours of Operation = 8,760.00 hours	8760	**hours**
pounds per ton = 0.000500 lb/ton	0.0005	**lb/ton**
PM Emissions:		
PM Emissions = 3.80ton/yr AP 42, Table 2.4-5	3.80	**ton/yr**
PM-10 Emissions:		
Emission Factor = 0.87 lb/hr (Assume All PM is PMtotal)	0.87	**lb/hr**
Calculation: (8,760.00 hours) * (0.87 lb/hr) * (ton/2000 lb) = 0.872 ton/yr	3.80	**ton/yr**
PM2.5 Emissions		
Emission Factor = 0.87 lb/hr (Assume All PM is PMTotal)	0.87	**lb/hr**
Calculation: (8,760.00 hours) * (0.87 lb/hr) * (ton/2000 lb) = 0.872 ton/yr	3.80	**ton/yr**
NOx Emissions:		
Emission Factor = 1.185 lb/hr Vendor Guarantee	4.56	**lb/hr**
Calculation: (8760.00 hours) * (4.56 lb/hr) * (ton/2000 lb) = 5.190 ton/yr	19.99	**ton/yr**
CO Emissions:		
Emission Factor = 15.21 lb/hr Vendor Guarantee	15.21	**lb/hr**
Calculation: (8,760.00 hours) * (15.21 lb/hr) * (ton/2000 lb) = 10.385 ton/yr	66.63	**ton/yr**
VOC Emissions:		
Emission Factor = 5.64 lb/hr Vendor Guarantee	5.64	**lb/hr**
Calculation: (8,760.00 hours) * (5.64 lb/hr) * (ton/2000 lb) = 6.176 ton/yr	24.68	**ton/yr**
SO_2 Emissions:		
Emission Factor = 1.72 lb/hr Mass Balance/process design	1.72	**lb/hr**
Calculation: (8,760.00 hours) * (1.72 lb/hr) * (ton/2000 lb) = 3.548 ton/yr	7.54	**ton/yr**
HAPs Emissions:		
Emission Factor = 0.4 lb/hr Sampling Data	0.4	**lb/hr**
Calculation: (8,760 hours) * (0.4000 lb/hr) * (ton/2000 lb) = 1.65 ton/yr	1.65	**ton/yr**

Natural Gas Emissions - TO		
Hours of Operation = 8,760.00 hours	8760	**hours**
pounds per ton = 0.000500 lb/ton	0.0005	**lb/ton**
PM Emissions:		
PM Emissions = 0.389 ton/yr AP 42, Table 1.4-2	0.389	**ton/yr**
PM_{10} Emissions:		
Emission Factor = 0.089 lb/hr (Assume All PM is PMTotal)	0.089	**lb/hr**
Calculation: (8,760.00 hours) * (0.089 lb/hr) * (ton/2000 lb) = 0.389 ton/yr	0.389	**ton/yr**
$PM_{2.5}$ Emissions		
Emission Factor = 0.089 lb/hr (Assume All PM is PMTotal)	0.089	**lb/hr**
Calculation: (8,760.00 hours) * (0.089 lb/hr) * (ton/2000 lb) = 0.389 ton/yr	0.389	**ton/yr**
VOC Emissions:		
Emission Factor = 0.041 lb/hr AP 42, Table 1.4-2	0.04	**lb/hr**
Calculation: (8,760.00 hours) * (0.04 lb/hr) * (ton/2000 lb) = 0.180 ton/yr	0.18	**ton/yr**
SO_2 Emissions:		
Emission Factor = 0.00702 lb/hr AP 42, Table 1.4-2	0.00702	**lb/hr**
Calculation: (8,760.00 hours) * (0.00702 lb/hr) * (ton/2000 lb) = 0.0307 ton/yr	0.0307	**ton/yr**
HAPs Emissions:		
Emission Factor = 0.0221 lb/hr AP 42, Table 1.4-3	0.0221	**lb/hr**
Calculation: (8,760 hours) * (0.0221 lb/hr) * (ton/2000 lb) = 0.097 ton/yr	0.097	**ton/yr**
Emergency Diesel Engine		
Note: Emissions are based on the power output of the engine (324 hp).		
Operational Capacity of Engine = 324 hp	324	**hp**
Hours of Operation = 500.00 hours	500	**hours**
grams per pound = 0.002205 g/lb	0.002205	**g/lb**
PM Emissions:		
PM Emissions = 0.015 ton/yr (AP-42, Table 1.4-2)	0.0146	**ton/yr**
PM_{10} Emissions:		
Emission Factor = 0.082 g/bhp-hr (Assumed all PM is $PM_{2.5}$)	8.20E-02	**g/bhp-hr**
Calculation: (0.082 g/bhp-hr) * (324.0 hp) * (324 hp) * (0.002205 g/lb) * (0.0820 g/bhp-hr) * (ton/2000 lb) = 0.01 ton/yr	0.0146	**ton/yr**
$PM_{2.5}$ Emissions		
Emission Factor = 0.082 g/bhp-hr (Assumed all PM is $PM_{2.5}$)	8.20E-02	**g/bhp-hr**
Calculation: (0.082 g/bhp-hr) * (324.0 hp) * (324 hp) * (0.002205 g/lb) * (0.0820 g/bhp-hr) * (ton/2000 lb) = 0.01 ton/yr	0.0146	**ton/yr**
NO_X & VOC Emissions:		
Emission Factor = 2.98 g/bhp*hr Manufactures Emissions	2.98	**g/bhp*hr**
Calculation: (2.98 g/bhp*hr) * (324 hp) * (500 hours) * (0.002205 g/lb) * (ton/2000 lb) = 0.53 ton/yr	0.53	**ton/yr**
CO Emissions:		
Emission Factor = 0.75 g/bhp*hr Manufactures Emissions	0.75	**g/bhp*hr**
Calculation: (0.75 g/bhp*hr) * (324 hp) * (500 hours) * (0.002205 g/lb) * (ton/2000 lb) = 0.13 ton/yr	0.13	**ton/yr**

Emergency Diesel Engine

VOC Emissions:		
Emission Factor = 2.98 g/bhp*hr Manufactures Emissions	2.98	**g/bhp*hr**
Calculation: (2.98 g/bhp*hr) * (324 hp) * (500 hours) * (0.002205 g/lb) * (ton/2000 lb) = 0.53 ton/yr	0.53	**ton/yr**
SO_X Emissions:		
Emission Factor = 0.00152 lbs/MMBtu (AP-42, Table 1.4-2)	1.52E-03	**lbs/mmBtu**
Calculation: (0.0015 lbs/MMBtu) * (28 gal/hr) * (0.137 MMBtu/gal) * (500 hr/yr) * (ton/2000 lb) = 0.00 ton/yr	0.00146	**ton/yr**

V. Existing Air Quality

The Lightning Renewables facility is located within an area of Missoula County that is designated as an Unclassifiable/Attainment area for the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants with the exception of PM_{10} and CO. The area where the facility is proposed to be located is considered a maintenance area for PM_{10} and CO. Missoula maintains control of the measures for PM_{10} and CO under their SIP approved County Air Quality Program. The CO and PM_{10} emissions associated with MAQP #5286-03 will not trigger any violations of the current Missoula County maintenance plan.

DEQ determined there will be no significant impacts to the NAAQS because the proposed equipment will be installed and operated in an already existing Municipal Solid Waste Landfill that currently burns the waste gas in a flare.

VI. Air Quality Impacts

DEQ determined there will be no impacts from this permitting action because the permitting change is an administrative action. Therefore, DEQ believes this action will not cause or contribute to a violation of any ambient air quality standard.

VII. Ambient Air Impact Analysis

Based on the information provided and the conditions established in MAQP #5286-03, DEQ determined there will be no impacts from this permitting action. DEQ believes it will not cause or contribute to a violation of any ambient air quality standard.

VIII. Health Risk Assessment

A health risk assessment was not required because the current permit action is considered an administrative change. However, the Health Risk Assessment associated with MAQP #5286-02 is still valid.

DEQ determined that the risks estimated in the risk assessment for the thermal oxidizer and the shrouded flare are in compliance with the requirement to demonstrate negligible risk to human health and the environment. As documented in the health risk assessment, and in accordance with the negligible risk requirement, no single HAP concentration results in Cancer Risk greater than 1.00E-06 and the sum of all HAPs results in a Cancer Risk of less than 1.00E-05. Further, the

sum of Chronic Noncancer Reference Exposure Level (CNCREL) hazard quotient is less than 1.0 as required to demonstrate compliance with the negligible risk requirement.

Health Risk Assessment:

AERSCREEN 21112 / AERMOD 24142 **04/04/25**
10:03:50

TITLE: ARCHAEA MISSOULA TO SCENARIO

********** **STACK PARAMETERS** **********

SOURCE EMISSION RATE:	0.0501	g/s	0.398	lb/hr
STACK HEIGHT:	18.29	meters	60.00	feet
STACK INNER DIAMETER:	0.965	meters	96.00	inches
PLUME EXIT TEMPERATURE:	699.8	K	800.0	Deg F
PLUME EXIT VELOCITY:	9.567	m/s	31.39	ft/s
STACK AIR FLOW RATE:	94665	ACFM		
RURAL OR URBAN:	RURAL			

INITIAL PROBE DISTANCE = 5025. meters 16486. feet

********** **BUILDING DOWNWASH PARAMETERS** **********

NO BUILDING DOWNWASH HAS BEEN REQUESTED FOR THIS ANALYSIS

********** **PROBE ANALYSIS** **********
---

25 meter receptor spacing: 15. meters - 5025. meters

Zo SECTOR	ROUGHNESS LENGTH	1-HR CONC (ug/m3)	DIST (m)	TEMPORAL PERIOD
1*	**0.100**	**0.8645**	**175.0**	**SUM**

*** = worst case flow sector**

********** **MAKEMET METEOROLOGY PARAMETERS** **********

MIN/MAX TEMPERATURE: 250.0 / 310.0 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Grassland
DOMINANT CLIMATE TYPE: Average Moisture
DOMINANT SEASON: Summer

ALBEDO: 0.18
BOWEN RATIO: 0.80
ROUGHNESS LENGTH: 0.100 (meters) SURFACE

FRICTION VELOCITY (U*) NOT ADUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR
10 06 12 12 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-64.00	1.560	-9.000	0.020	-999.	4000.	5653.0	0.100	0.80	0.18	10.00

HT	REF TA	HT
10.0	310.0	2.0

WIND SPEED AT STACK HEIGHT (non-downwash): 20.4 m/s
STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 13.3 meters
ESTIMATED FINAL PLUME RISE (non-downwash): 4.7 meters
ESTIMATED FINAL PLUME HEIGHT (non-downwash): 17.9 meters

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR
10 02 03 12 12

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
264.47	0.105	1.200	0.020	604.	78.	-1.0	0.100	0.80	0.18	0.50

HT	REF TA	HT
10.0	310.0	2.0

WIND SPEED AT STACK HEIGHT (non-downwash):	0.7	m/s
STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT:	18.3	meters
ESTIMATED FINAL PLUME RISE (non-downwash):	566.1	meters
ESTIMATED FINAL PLUME HEIGHT (non-downwash):	584.4	meters

********** AERSCREEN AUTOMATED DISTANCES **********

OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)
15.24	0.4532E-01	2525.00	0.2207
25.00	0.6839E-01	2550.00	0.2196
50.00	0.1014	2575.00	0.2185
75.00	0.1202	2600.00	0.2175
100.00	0.2670	2625.00	0.2164
125.00	0.6507	2650.00	0.2153
150.00	0.8383	2675.00	0.2143
175.00	0.8645	2700.00	0.2132
200.00	0.8267	2725.00	0.2121
225.00	0.7620	2750.00	0.2110
250.00	0.7319	2775.00	0.2099
275.00	0.6870	2800.00	0.2088
300.00	0.6366	2825.00	0.2077
325.00	0.5858	2850.00	0.2066
350.00	0.5693	2875.00	0.2055
375.00	0.5572	2900.00	0.2044
400.00	0.5394	2925.00	0.2033
425.00	0.5182	2950.00	0.2022
450.00	0.4953	2975.00	0.2012
475.00	0.4717	3000.00	0.2001
500.00	0.4481	3025.00	0.1990
525.00	0.4250	3050.00	0.1980
550.00	0.4028	3075.00	0.1970
575.00	0.3817	3100.00	0.1959
600.00	0.3649	3125.00	0.1949
625.00	0.3615	3150.00	0.1939
650.00	0.3567	3175.00	0.1929
675.00	0.3509	3200.00	0.1919
700.00	0.3443	3225.00	0.1909
725.00	0.3370	3250.00	0.1899
750.00	0.3294	3275.00	0.1890
775.00	0.3215	3300.00	0.1880

800.00	0.3134
825.00	0.3053
850.00	0.2971
875.00	0.2890
900.00	0.2811
925.00	0.2732
950.00	0.2655
975.00	0.2581
1000.00	0.2508
1025.00	0.2437
1050.00	0.2401
1075.00	0.2416
1100.00	0.2429
1125.00	0.2439
1150.00	0.2447
1175.00	0.2453
1200.00	0.2457
1225.00	0.2459
1250.00	0.2459
1275.00	0.2459
1300.00	0.2456
1325.00	0.2453
1350.00	0.2449
1375.00	0.2459
1400.00	0.2468
1425.00	0.2475
1450.00	0.2481
1475.00	0.2486
1500.00	0.2489
1525.00	0.2492
1550.00	0.2493
1575.00	0.2494
1600.00	0.2493
1625.00	0.2492
1650.00	0.2491
1675.00	0.2488
1700.00	0.2485
1725.00	0.2481
1750.00	0.2477
1775.00	0.2472
1800.00	0.2467
1825.00	0.2461
1850.00	0.2455
1875.00	0.2448
1900.00	0.2441
1925.00	0.2434
1950.00	0.2427
1975.00	0.2419
2000.00	0.2411
2025.00	0.2403
3325.00	0.1871
3350.00	0.1861
3375.00	0.1852
3400.00	0.1843
3425.00	0.1833
3450.00	0.1824
3475.00	0.1815
3500.00	0.1806
3525.00	0.1797
3550.00	0.1789
3575.00	0.1780
3600.00	0.1771
3625.00	0.1763
3650.00	0.1755
3675.00	0.1748
3700.00	0.1740
3725.00	0.1733
3750.00	0.1726
3775.00	0.1718
3800.00	0.1711
3825.00	0.1704
3850.00	0.1697
3875.00	0.1690
3900.00	0.1683
3925.00	0.1676
3950.00	0.1669
3975.00	0.1662
4000.00	0.1655
4025.00	0.1648
4050.00	0.1641
4075.00	0.1635
4100.00	0.1628
4125.00	0.1621
4150.00	0.1615
4175.00	0.1608
4200.00	0.1602
4225.00	0.1595
4250.00	0.1589
4275.00	0.1583
4300.00	0.1576
4325.00	0.1570
4350.00	0.1564
4375.00	0.1558
4400.00	0.1552
4425.00	0.1545
4450.00	0.1539
4475.00	0.1533
4500.00	0.1527
4525.00	0.1521
4550.00	0.1516

2050.00	0.2394	4575.00	0.1510
2075.00	0.2385	4600.00	0.1504
2100.00	0.2376	4625.00	0.1498
2125.00	0.2367	4650.00	0.1492
2150.00	0.2358	4675.00	0.1487
2175.00	0.2349	4700.00	0.1481
2200.00	0.2339	4725.00	0.1475
2225.00	0.2329	4750.00	0.1470
2250.00	0.2319	4775.00	0.1464
2275.00	0.2310	4800.00	0.1459
2300.00	0.2300	4825.00	0.1453
2325.00	0.2289	4850.00	0.1448
2350.00	0.2279	4875.00	0.1442
2375.00	0.2269	4900.00	0.1437
2400.00	0.2259	4925.00	0.1432
2425.00	0.2248	4950.00	0.1427
2450.00	0.2238	4975.00	0.1421
2475.00	0.2228	5000.00	0.1416
2500.00	0.2217	5025.00	0.1411

********** **AERSCREEN MAXIMUM IMPACT SUMMARY** **********

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	0.8659	0.8659	0.7793	0.5196	0.8659E-01

DISTANCE FROM SOURCE **170.00 meters**

IMPACT AT THE AMBIENT BOUNDARY	0.04532	0.04532	0.04079	0.02719	0.04532

DISTANCE FROM SOURCE **15.24 meters**

Human Health Risk Assessment for the TOX

Cancer and Noncancer Chronic Modeled Concentration	8.66E-02	ug/m3 / lb/hr Total Hap Emission Rate
Noncancer Acute Modeled Concentration	8.66E-01	ug/m3 / lb/hr Total Hap Emission Rate

Stack Parameters (Exhaust Stack)

Stack Height (ft)	Stack Diameter (in)	Stack Temp (F)	Stack Flow Rate (acfm)	Total HAP Hourly Emission Rate (lb/hr)
60	96	800	94,665	0.398

HAP Category / Pollutant Name	CAS #	Annual Fraction of all HAPS	Calculated Annual HAP Concentration (ug/m3)	1 hr Fraction of all HAPS	Calculated 1 hr HAP Concentration (ug/m3)	ARM 17.8.770 Table 1 Cancer Annual (ug/m3)	Table 2 Noncancer Chronic Annual (ug/m3)	Table 2 Noncancer Acute Annual (ug/m3)	Exceed ARM 17.8.770 Table 1?	Exceed ARM 17.8.770 Table 2 Chronic?	Exceed ARM 17.8.770 Table 2 Acute?
1,1,1-Trichloroethane	71556	3.37E-05	2.92E-06	3.37E-05	2.92E-05	N/A	3.2000E+00	1.9000E+03	No	No	No
1,1,2,2-Tetrachloroethane	79345	4.24E-05	3.67E-06	4.24E-05	3.67E-05	1.7241E-03	N/A	N/A	No	No	No
1,1,2-Trichloroethane	79005	3.37E-05	2.92E-06	3.37E-05	2.92E-05	6.2500E-03	N/A	N/A	No	No	No
1,1-Dichloroethane	75343	1.30E-04	1.12E-05	1.30E-04	1.12E-04	N/A	N/A	N/A	No	No	No
1,1-Dichloroethene	75354	2.45E-05	2.12E-06	2.45E-05	2.12E-05	2.0000E-03	3.2000E-01	N/A	No	No	No
1,2,4-Trichlorobenzene	120821	4.59E-05	3.97E-06	4.59E-05	3.97E-05	N/A	N/A	N/A	No	No	No
1,2-Dichloroethane	107062	3.68E-04	3.19E-05	3.68E-04	3.19E-04	3.8462E-03	9.5000E-01	N/A	No	No	No
1,2-Dichloropropane	78875	3.25E-05	2.82E-06	3.25E-05	2.82E-05	N/A	4.0000E-02	N/A	No	No	No
1,2-Dichlorobenzene	95501	3.72E-05	3.22E-06	3.72E-05	3.22E-05	N/A	N/A	N/A	No	No	No
1,3-Butadiene	106990	1.37E-05	1.18E-06	1.37E-05	1.18E-05	3.5714E-04	N/A	N/A	No	No	No
1,3-Dichlorobenzene	541731	2.06E-04	1.78E-05	2.06E-04	1.78E-04	N/A	N/A	N/A	No	No	No
1,4-Dichlorobenzene	106467	3.71E-05	3.22E-06	3.71E-05	3.22E-05	9.0909E-03	8.0000E+00	N/A	No	No	No
1,4-Dioxane	123911	4.45E-05	3.86E-06	4.45E-05	3.86E-05	1.2987E-02	4.0000E-02	2.0000E+01	No	No	No
2-Butanone	78933	4.35E-03	3.77E-04	4.35E-03	3.77E-03	N/A	1.0000E+01	N/A	No	No	No
2-Methylnaphthalene	91576	7.06E-07	6.11E-08	7.06E-07	6.11E-07	N/A	N/A	N/A	No	No	No
2-Propanol (IPA)	67630	7.03E-03	6.08E-04	7.03E-03	6.08E-03	N/A	N/A	N/A	No	No	No
3-Methylcholanthrene	56495	5.29E-08	4.58E-09	5.29E-08	4.58E-08	N/A	N/A	N/A	No	No	No
7,12-Dimethylbenz(a)anthracene	57976	4.71E-07	4.07E-08	4.71E-07	4.07E-07	N/A	N/A	N/A	No	No	No
Acenaphthene	83329	5.29E-08	4.58E-09	5.29E-08	4.58E-08	N/A	N/A	N/A	No	No	No
Acenaphthylene	208968	5.29E-08	4.58E-09	5.29E-08	4.58E-08	N/A	N/A	N/A	No	No	No
Acetone	67641	4.91E-03	4.25E-04	4.91E-03	4.25E-03	N/A	N/A	N/A	No	No	No
Acrylonitrile	107131	1.34E-05	1.16E-06	1.34E-05	1.16E-05	1.4706E-03	2.0000E-02	N/A	No	No	No
Allyl Chloride	107051	3.87E-05	3.35E-06	3.87E-05	3.35E-05	N/A	1.0000E-02	N/A	No	No	No
Anthracene	120127	7.06E-08	6.11E-09	7.06E-08	6.11E-08	N/A	N/A	N/A	No	No	No
Arsenic	7440382	7.06E-06	6.11E-07	7.06E-06	6.11E-06	2.3256e-05	5.0000E-03	N/A	No	No	No
Benz(a)anthracene	56553	5.29E-08	4.58E-09	5.29E-08	4.58E-08	5.8824E-05	N/A	N/A	No	No	No
Benzene	71432	6.48E-04	5.61E-05	6.48E-04	5.61E-04	1.2048E-02	7.1000E-01	N/A	No	No	No
Benzo(a)pyrene	50328	3.53E-08	3.06E-09	3.53E-08	3.06E-08	5.8824E-05	N/A	N/A	No	No	No
Benzo(b)fluoranthene	205992	5.29E-08	4.58E-09	5.29E-08	4.58E-08	5.8824E-05	N/A	N/A	No	No	No
Benzo(g,h,i)perylene	191242	3.53E-08	3.06E-09	3.53E-08	3.06E-08	N/A	N/A	N/A	No	No	No
Benzo(k)fluoranthene	207089	5.29E-08	4.58E-09	5.29E-08	4.58E-08	5.8824E-05	N/A	N/A	No	No	No
Benzyl Chloride	100447	3.20E-05	2.77E-06	3.20E-05	2.77E-05	N/A	1.2000E-01	5.0000E-01	No	No	No
Beryllium	7440417	3.53E-07	3.06E-08	3.53E-07	3.06E-07	4.1667E-05	4.8000E-05	N/A	No	No	No
Bromodichloromethane	75274	4.14E-05	3.58E-06	4.14E-05	3.58E-05	N/A	N/A	N/A	No	No	No
Bromoform	75252	6.39E-05	5.53E-06	6.39E-05	5.53E-05	9.0909E-02	N/A	N/A	No	No	No
Bromomethane	74839	2.75E-05	2.38E-06	2.75E-05	2.38E-05	N/A	5.0000E-02	N/A	No	No	No
Cadmium	7440439	4.12E-05	3.57E-06	4.12E-05	3.57E-05	5.5556E-05	3.5000E-02	N/A	No	No	No
Carbon Disulfide	75150	7.72E-05	6.68E-06	7.72E-05	6.68E-05	N/A	7.0000E+00	N/A	No	No	No
Carbon Tetrachloride	56235	3.89E-05	3.37E-06	3.89E-05	3.37E-05	6.6667E-03	2.4000E-02	1.9000E+00	No	No	No
Carbonyl Sulfide	463581	1.46E-05	1.27E-06	1.46E-05	1.27E-05	N/A	N/A	N/A	No	No	No
Chlorobenzene	108907	2.84E-05	2.46E-06	2.84E-05	2.46E-05	N/A	7.0000E-01	N/A	No	No	No
Chlorodifluoromethane	75456	5.56E-04	4.81E-05	5.56E-04	4.81E-04	N/A	N/A	N/A	No	No	No
Chloroethane	75003	1.67E-04	1.45E-05	1.67E-04	1.45E-04	N/A	1.0000E+02	N/A	No	No	No
Chloroform	67663	3.02E-05	2.61E-06	3.02E-05	2.61E-05	4.3478E-03	3.5000E-01	N/A	No	No	No
Chloromethane	74873	2.88E-05	2.50E-06	2.88E-05	2.50E-05	N/A	N/A	N/A	No	No	No

Human Health Risk Assessment for the TOX

Cancer and Noncancer Chronic Modeled Concentration	8.66E-02	ug/m3 / lb/hr Total Hap Emission Rate
Noncancer Acute Modeled Concentration	8.66E-01	ug/m3 / lb/hr Total Hap Emission Rate

Stack Parameters (Exhaust Stack)

Stack Height (ft)	Stack Diameter (in)	Stack Temp (F)	Stack Flow Rate (acfm)	Total HAP Hourly Emission Rate (lb/hr)
60	96	800	94,665	0.398

HAP Category / Pollutant Name	CAS #	Annual Fraction of all HAPS	Calculated Annual HAP Concentration (ug/m3)	1 hr Fraction of all HAPS	Calculated 1 hr HAP Concentration (ug/m3)	ARM 17.8.770 Table 1 Cancer Annual (ug/m3)	Table 2 Noncancer Chronic Annual (ug/m3)	Table 2 Noncancer Acute Annual (ug/m3)	Exceed ARM 17.8.770 Table 1?	Exceed ARM 17.8.770 Table 2 Chronic?	Exceed ARM 17.8.770 Table 2 Acute?
Chromium	18540299	4.12E-05	3.57E-06	4.12E-05	3.57E-05	8.3333E-06	2.0000E-05	N/A	No	No	No
Chrysene	218019	5.29E-08	4.58E-09	5.29E-08	4.58E-08	N/A	N/A	N/A	No	No	No
cis-1,3-Dichloropropene	10061015	2.80E-05	2.43E-06	2.80E-05	2.43E-05	N/A	N/A	N/A	No	No	No
Cobalt	7440484	2.47E-06	2.14E-07	2.47E-06	2.14E-06	N/A	N/A	N/A	No	No	No
Dibenzo(a,h)anthracene	53703	3.53E-08	3.06E-09	3.53E-08	3.06E-08	5.8824E-05	N/A	N/A	No	No	No
Dichlorodifluoromethane	75718	6.23E-04	5.40E-05	6.23E-04	5.40E-04	N/A	N/A	N/A	No	No	No
Dichlorofluoromethane	75434	3.50E-04	3.03E-05	3.50E-04	3.03E-04	N/A	N/A	N/A	No	No	No
Dichloromethane	75092	6.20E-04	5.37E-05	6.20E-04	5.37E-04	2.1277E-01	3.0000E+01	3.5000E+01	No	No	No
Dimethyl Sulfide	75183	8.14E-04	7.05E-05	8.14E-04	7.05E-04	N/A	N/A	N/A	No	No	No
Ethanol	64175	2.84E-02	2.46E-03	2.84E-02	2.46E-02	N/A	N/A	N/A	No	No	No
Ethyl Mercaptan	75081	3.15E-05	2.73E-06	3.15E-05	2.73E-05	N/A	N/A	N/A	No	No	No
Ethylbenzene	100414	2.85E-03	2.47E-04	2.85E-03	2.47E-03	N/A	1.0000E+01	N/A	No	No	No
Ethylene Dibromide	106934	4.75E-05	4.11E-06	4.75E-05	4.11E-05	4.5455E-04	4.6000E-02	N/A	No	No	No
Fluoranthene	206440	8.82E-08	7.64E-09	8.82E-08	7.64E-08	N/A	N/A	N/A	No	No	No
Fluorene	86737	8.23E-08	7.13E-09	8.23E-08	7.13E-08	N/A	N/A	N/A	No	No	No
Formaldehyde	50000	2.21E-03	1.91E-04	2.21E-03	1.91E-03	7.6923E-03	3.6000E-02	3.7000E+00	No	No	No
Hexachlorobutadiene	87683	6.59E-05	5.71E-06	6.59E-05	5.71E-05	4.5455E-03	N/A	N/A	No	No	No
Hexane	110543	5.51E-02	4.77E-03	5.51E-02	4.77E-02	N/A	2.0000E+00	N/A	No	No	No
Hydrogen Chloride	7647010	7.56E-01	6.54E-02	7.56E-01	6.54E-01	N/A	2.0000E-01	3.0000E+01	No	No	No
Hydrogen Fluoride	7664393	1.12E-01	9.71E-03	1.12E-01	9.71E-02	N/A	5.9000E-02	5.8000E+00	No	No	No
Hydrogen Sulfide	7783064	2.83E-03	2.45E-04	2.83E-03	2.45E-03	N/A	N/A	N/A	No	No	No
Indeno(1,2,3-cd)pyrene	193395	5.29E-08	4.58E-09	5.29E-08	4.58E-08	5.8824E-05	N/A	N/A	No	No	No
Lead	7439921	1.47E-05	1.27E-06	1.47E-05	1.27E-05	N/A	1.5000E-02	N/A	No	No	No
Manganese	7439965	1.12E-05	9.68E-07	1.12E-05	9.68E-06	N/A	5.0000E-04	N/A	No	No	No
Mercury	7439976	1.15E-05	9.96E-07	1.15E-05	9.96E-06	N/A	3.0000E-03	3.0000E-01	No	No	No
Methanol	67561	1.67E-03	1.44E-04	1.67E-03	1.44E-03	N/A	6.2000E+00	N/A	No	No	No
Methyl Isobutyl Ketone	108101	5.23E-04	4.53E-05	5.23E-04	4.53E-04	N/A	N/A	N/A	No	No	No
Methyl Mercaptan	74931	3.04E-04	2.63E-05	3.04E-04	2.63E-04	N/A	N/A	N/A	No	No	No
Methyl Tert Butyl Ether	1634044	2.23E-05	1.93E-06	2.23E-05	1.93E-05	N/A	3.0000E+01	N/A	No	No	No
Naphthalene	91203	1.79E-05	1.55E-06	1.79E-05	1.55E-05	N/A	1.4000E-01	N/A	No	No	No
Nickel	7440020	6.18E-05	5.35E-06	6.18E-05	5.35E-05	3.8462E-04	2.4000E-03	1.0000E-02	No	No	No
Phenanthrene	85018	5.00E-07	4.33E-08	5.00E-07	4.33E-07	N/A	N/A	N/A	No	No	No
Pyrene	129000	1.47E-07	1.27E-08	1.47E-07	1.27E-07	N/A	N/A	N/A	No	No	No
Selenium	7782492	7.06E-07	6.11E-08	7.06E-07	6.11E-07	N/A	5.0000E-03	2.0000E-02	No	No	No
Styrene	100425	4.38E-04	3.79E-05	4.38E-04	3.79E-04	N/A	1.0000E+01	N/A	No	No	No
t-1,2-Dichloroethene	156605	5.49E-05	4.75E-06	5.49E-05	4.75E-05	N/A	N/A	N/A	No	No	No
t-1,3-Dichloropropene	10061026	2.80E-05	2.43E-06	2.80E-05	2.43E-05	N/A	N/A	N/A	No	No	No
Tetrachloroethene	127184	7.35E-04	6.36E-05	7.35E-04	6.36E-04	1.6949E-02	3.5000E-01	6.8000E+01	No	No	No
Toluene	108883	5.42E-03	4.70E-04	5.42E-03	4.70E-03	N/A	4.0000E+00	N/A	No	No	No
Trichloroethene	79016	3.01E-04	2.61E-05	3.01E-04	2.61E-04	5.0000E-02	6.4000E+00	N/A	No	No	No
Vinyl Acetate	108054	4.35E-05	3.77E-06	4.35E-05	3.77E-05	N/A	2.0000E+00	N/A	No	No	No
Vinyl Bromide	593602	2.70E-05	2.34E-06	2.70E-05	2.34E-05	N/A	3.0000E-02	N/A	No	No	No
Vinyl Chloride	75014	3.32E-04	2.87E-05	3.32E-04	2.87E-04	1.2821E-03	N/A	N/A	No	No	No
Xylenes	1330207	9.03E-03	7.82E-04	9.03E-03	7.82E-03	N/A	3.0000E+00	4.4000E+01	No	No	No

IX. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, DEQ conducted a private property taking and damaging assessment which is located in the attached environmental assessment.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

The proposed action would take place on private land. DEQ determined the permit conditions are reasonably necessary to ensure compliance with applicable requirements under the Montana Clean Air Act. Therefore, DEQ's approval of MAQP #5286-03 would not have private property-taking or damaging implications.

X. Environmental Assessment

This permitting action will not result in an increase of emissions from the facility and is considered an administrative action; therefore, an Environmental Assessment is not required.

Analysis Prepared by Conor M. Fox, Air Quality Engineering Scientist
Date: October 15, 2025